SEQ ID NO:1

```
gat atc cag atg acc cag act aca tcc tcc ctg tct gcc tct ctg gga   48
Asp Ile Gln Met Thr Gln Thr Thr Ser Ser Leu Ser Ala Ser Leu Gly
1               5               10              15

gac aga gtc acc att agt tgc agg gca agt cag gac att agc aat tat   96
Asp Arg Val Thr Ile Ser Cys Arg Ala Ser Gln Asp Ile Ser Asn Tyr
            20              25              30

tta aac tgg tat cag cag aaa cca gat gga act gtt aaa ctc ctg atc   144
Leu Asn Trp Tyr Gln Gln Lys Pro Asp Gly Thr Val Lys Leu Leu Ile
            35              40              45

tac tac aca tca ata tta cac tca gga gtc cca tca agg ttc agt ggc   192
Tyr Tyr Thr Ser Ile Leu His Ser Gly Val Pro Ser Arg Phe Ser Gly
        50              55              60

agt ggg tct gga aca gat tat tct ctc acc att agc aac ctg gag caa   240
Ser Gly Ser Gly Thr Asp Tyr Ser Leu Thr Ile Ser Asn Leu Glu Gln
65              70              75              80

gaa gat ttt gcc act tac ttt tgc caa cag ggt aat acg ctt ccg tgg   288
Glu Asp Phe Ala Thr Tyr Phe Cys Gln Gln Gly Asn Thr Leu Pro Trp
            85              90              95

acg ttc ggt gga ggc acc aag ctg gaa atc aaa                       321
Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys
            100             105
```

SEQ ID NO:2

```
Asp Ile Gln Met Thr Gln Thr Thr Ser Ser Leu Ser Ala Ser Leu Gly
1               5               10              15
Asp Arg Val Thr Ile Ser Cys Arg Ala Ser Gln Asp Ile Ser Asn Tyr
            20              25              30
Leu Asn Trp Tyr Gln Gln Lys Pro Asp Gly Thr Val Lys Leu Leu Ile
            35              40              45
Tyr Tyr Thr Ser Ile Leu His Ser Gly Val Pro Ser Arg Phe Ser Gly
        50              55              60
Ser Gly Ser Gly Thr Asp Tyr Ser Leu Thr Ile Ser Asn Leu Glu Gln
65              70              75              80
Glu Asp Phe Ala Thr Tyr Phe Cys Gln Gln Gly Asn Thr Leu Pro Trp
            85              90              95
Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys
            100             105
```

SEQ ID NO:3

```
gaa gtg cag ctg gtg gag tct ggg gga ggc tta gtg aag cct gga ggg   48
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Lys Pro Gly Gly
1               5               10              15

tcc ctg aaa ctc tcc tgt gca gcc tct gga ttc gct ttc agt atc tat   96
Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Ala Phe Ser Ile Tyr
            20              25              30
```

```
gac atg tct tgg gtt cgc cag act ccg gag aag agg ctg gag tgg gtc    144
Asp Met Ser Trp Val Arg Gln Thr Pro Glu Lys Arg Leu Glu Trp Val
        35                      40                  45

gca tac att agt agt ggt ggt ggt acc acc tac tat cca gac act gtg    192
Ala Tyr Ile Ser Ser Gly Gly Gly Thr Thr Tyr Tyr Pro Asp Thr Val
        50              55                  60

aag ggc cga ttc acc atc tcc aga gac aat gcc aag aac acc ctg tac    240
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Thr Leu Tyr
65              70                  75                  80

ctg caa atg agc agt ctg aag tct gag gac aca gcc atg tat tac tgt    288
Leu Gln Met Ser Ser Leu Lys Ser Glu Asp Thr Ala Met Tyr Tyr Cys
                85                  90                  95

gca aga cat agt ggc tac ggt agt agc tac ggg gtt ttg ttt gct tac    336
Ala Arg His Ser Gly Tyr Gly Ser Ser Tyr Gly Val Leu Phe Ala Tyr
            100             105                 110

tgg ggc caa ggg act ctg gtc act gtc tct gca                        369
Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ala
        115             120
```

SEQ ID NO:4

```
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Lys Pro Gly Gly
1               5                   10                  15
Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Ala Phe Ser Ile Tyr
            20                  25                  30
Asp Met Ser Trp Val Arg Gln Thr Pro Glu Lys Arg Leu Glu Trp Val
        35                      40                  45
Ala Tyr Ile Ser Ser Gly Gly Gly Thr Thr Tyr Tyr Pro Asp Thr Val
        50              55                  60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Thr Leu Tyr
65              70                  75                  80
Leu Gln Met Ser Ser Leu Lys Ser Glu Asp Thr Ala Met Tyr Tyr Cys
                85                  90                  95
Ala Arg His Ser Gly Tyr Gly Ser Ser Tyr Gly Val Leu Phe Ala Tyr
            100             105                 110
Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ala
        115             120
```

SEQ ID NO:5

```
Lys Asp Glu Leu
1
```

SEQ ID NO:6
```
Arg Glu Asp Leu
1
```

SEQ ID NO:7
```
Gln Asp Ile His Gly Tyr
1               5
```

```
SEQ ID NO:8
Gln Asp Ile Gly Arg Tyr
1               5
```

```
SEQ ID NO:9
Gln Asp Ile Arg Gly Tyr
1               5
```

```
SEQ ID NO:10
Gln Asp Ile Ala Arg Tyr
1               5
```

```
SEQ ID NO:11
Tyr Thr Ser
1
```

```
SEQ ID NO:12
Gln Gln Gly Asn Thr Leu Pro Trp Thr
1               5
```

```
SEQ ID NO:13
Gly Phe Ala Phe Ser Ile Tyr Asp
1               5
```

```
SEQ ID NO:14
Ile Ser Ser Gly Gly Gly Thr Thr
1               5
```

```
SEQ ID NO:15
Ala Phe His Ser Gly Tyr Gly Ser Ser Tyr Gly Val Leu Phe Ala Tyr
1               5                   10                  15
```

```
SEQ ID NO:16
Ala Phe His Ser Gly Tyr Gly Thr His Trp Gly Val Leu Phe Ala Tyr
1               5                   10                  15
```

```
SEQ ID NO:17
Ala Phe His Ser Gly Tyr Gly Tyr Asn Trp Gly Val Leu Phe Ala Tyr
1               5                   10                  15
```

```
SEQ ID NO:18
Ala Phe His Ser Gly Tyr Gly Thr Thr Trp Gly Val Leu Phe Ala Tyr
1               5                   10                  15
```

```
SEQ ID NO:19
Ala Phe His Ser Gly Tyr Gly Ser Thr Tyr Gly Val Leu Phe Ala Tyr
1               5                   10                  15
```

SEQ ID NO:20
Asp Ile Gln Met Thr Gln Thr Thr Ser Ser Leu Ser Ala Ser Leu Gly
1   5   10   15
Asp Arg Val Thr Ile Ser Cys Arg Ala Ser Gln Asp Ile His Gly Tyr
            20   25   30
Leu Asn Trp Tyr Gln Gln Lys Pro Asp Gly Thr Val Lys Leu Leu Ile
        35   40   45
Tyr Tyr Thr Ser Ile Leu His Ser Gly Val Pro Ser Arg Phe Ser Gly
    50   55   60
Ser Gly Ser Gly Thr Asp Tyr Ser Leu Thr Ile Ser Asn Leu Glu Gln
65   70   75   80
Glu Asp Phe Ala Thr Tyr Phe Cys Gln Gln Gly Asn Thr Leu Pro Trp
            85   90   95
Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys
            100   105

SEQ ID NO:21
Glu Val Gln Leu Val Glu Ser Gly Gly Leu Val Lys Pro Gly Gly
1   5   10   15
Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Ala Phe Ser Ile Tyr
            20   25   30
Asp Met Ser Trp Val Arg Gln Thr Pro Glu Lys Arg Leu Glu Trp Val
        35   40   45
Ala Tyr Ile Ser Ser Gly Gly Gly Thr Thr Tyr Tyr Pro Asp Thr Val
    50   55   60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Thr Leu Tyr
65   70   75   80
Leu Gln Met Ser Ser Leu Lys Ser Glu Asp Thr Ala Met Tyr Tyr Cys
            85   90   95
Ala Arg His Ser Gly Tyr Gly Thr His Trp Gly Val Leu Phe Ala Tyr
            100   105   110
Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ala
            115   120

SEQ ID NO:22
Gly Gly Ser Leu Ala Ala Leu Thr Ala His Gln Ala Cys His Leu Pro
1   5   10   15
Leu Glu Thr Phe Thr Arg His Arg Gln Pro Arg Gly Trp Glu Gln Leu
            20   25   30
Glu Gln Cys Gly Tyr Pro Val Gln Arg Leu Val Ala Leu Tyr Leu Ala
            35   40   45
Ala Arg Leu Ser Trp Asn Gln Val Asp Gln Val Ile Arg Asn Ala Leu
    50   55   60
Ala Ser Pro Gly Ser Gly Gly Asp Leu Gly Glu Ala Ile Arg Glu Gln
65   70   75   80
Pro Glu Gln Ala Arg Leu Ala Leu Thr Leu Ala Ala Ala Glu Ser Glu
            85   90   95
Arg Phe Val Arg Gln Gly Thr Gly Asn Asp Glu Ala Gly Ala Ala Asn
            100   105   110
Gly Pro Ala Asp Ser Gly Asp Ala Leu Leu Glu Arg Asn Tyr Pro Thr
            115   120   125
Gly Ala Glu Phe Leu Gly Asp Gly Gly Asp Val Ser Phe Ser Thr Arg
    130   135   140
Gly Thr Gln Asn Trp Thr Val Glu Arg Leu Leu Gln Ala His Arg Gln
145   150   155   160
Leu Glu Glu Arg Gly Tyr Val Phe Val Gly Tyr His Gly Thr Phe Leu
                165   170   175
Glu Ala Ala Gln Ser Ile Val Phe Gly Gly Val Arg Ala Arg Ser Gln
            180   185   190

```
          Asp Leu Asp Ala Ile Trp Arg Gly Phe Tyr Ile Ala Gly Asp Pro Ala
                  195                 200                 205
          Leu Ala Tyr Gly Tyr Ala Gln Asp Gln Glu Pro Asp Ala Arg Gly Arg
                  210                 215                 220
   5      Ile Arg Asn Gly Ala Leu Leu Arg Val Tyr Val Pro Arg Ser Ser Leu
          225                 230                 235                 240
          Pro Gly Phe Tyr Arg Thr Ser Leu Thr Leu Ala Ala Pro Glu Ala Ala
                          245                 250                 255
          Gly Glu Val Glu Arg Leu Ile Gly His Pro Leu Pro Leu Arg Leu Asp
  10                  260                 265                 270
          Ala Ile Thr Gly Pro Glu Glu Glu Gly Gly Arg Leu Glu Thr Ile Leu
                  275                 280                 285
          Gly Trp Pro Leu Ala Glu Arg Thr Val Val Ile Pro Ser Ala Ile Pro
                  290                 295                 300
  15      Thr Asp Pro Arg Asn Val Gly Gly Asp Leu Asp Pro Ser Ser Ile Pro
          305                 310                 315                 320
          Asp Lys Glu Gln Ala Ile Ser Ala Leu Pro Asp Tyr Ala Ser Gln Pro
                          325                 330                 335
          Gly Lys Pro Pro Arg Glu Asp Leu Lys
  20                  340                 345


          SEQ ID NO:23
          Gly Gly Ser Leu Ala Ala Leu Thr Ala His Gln Ala Cys His Leu Pro
  25      1                   5                   10                  15
          Leu Glu Thr Phe Thr Arg His Arg Gln Pro Arg Gly Trp Glu Gln Leu
                          20                  25                  30
          Glu Gln Cys Gly Tyr Pro Val Gln Arg Leu Val Ala Leu Tyr Leu Ala
                          35                  40                  45
  30      Ala Arg Leu Ser Trp Asn Gln Val Asp Gln Val Ile Arg Asn Ala Leu
                  50                  55                  60
          Ala Ser Pro Gly Ser Gly Gly Asp Leu Gly Glu Ala Ile Arg Glu Gln
          65                  70                  75                  80
          Pro Glu Gln Ala Arg Leu Ala Leu Thr Leu Ala Ala Ala Glu Ser Glu
  35                          85                  90                  95
          Arg Phe Val Arg Gln Gly Thr Gly Asn Asp Glu Ala Gly Ala Ala Asn
                          100                 105                 110
          Gly Pro Ala Asp Ser Gly Asp Ala Leu Leu Glu Arg Asn Tyr Pro Thr
                  115                 120                 125
  40      Gly Ala Glu Phe Leu Gly Asp Gly Gly Asp Val Ser Phe Ser Thr Arg
                  130                 135                 140
          Gly Thr Gln Asn Trp Thr Val Glu Arg Leu Leu Gln Ala His Arg Gln
          145                 150                 155                 160
          Leu Glu Glu Arg Gly Tyr Val Phe Val Gly Tyr His Gly Thr Phe Leu
  45                          165                 170                 175
          Glu Ala Ala Gln Ser Ile Val Phe Gly Gly Val Arg Ala Arg Ser Gln
                  180                 185                 190
          Asp Leu Asp Ala Ile Trp Arg Gly Phe Tyr Ile Ala Gly Asp Pro Ala
                  195                 200                 205
  50      Leu Ala Tyr Gly Tyr Ala Gln Asp Gln Glu Pro Asp Ala Ala Gly Arg
                  210                 215                 220
          Ile Arg Asn Gly Ala Leu Leu Arg Val Tyr Val Pro Arg Ser Ser Leu
          225                 230                 235                 240
          Pro Gly Phe Tyr Arg Thr Ser Leu Thr Leu Ala Ala Pro Glu Ala Ala
  55                          245                 250                 255
          Gly Glu Val Glu Arg Leu Ile Gly His Pro Leu Pro Leu Arg Leu Asp
                  260                 265                 270
          Ala Ile Thr Gly Pro Glu Glu Glu Gly Gly Arg Leu Glu Thr Ile Leu
                  275                 280                 285
  60      Gly Trp Pro Leu Ala Glu Arg Thr Val Val Ile Pro Ser Ala Ile Pro
                  290                 295                 300
```

```
Thr Asp Pro Arg Asn Val Gly Gly Asp Leu Asp Pro Ser Ser Ile Pro
305             310             315             320
Asp Lys Glu Gln Ala Ile Ser Ala Leu Pro Asp Tyr Ala Ser Gln Pro
            325             330             335
Gly Lys Pro Pro Arg Glu Asp Leu Lys
            340             345
```

```
SEQ ID NO:24
Ala Glu Glu Ala Phe Asp Leu Trp Asn Glu Cys Ala Lys Ala Cys Val
1               5               10              15
Leu Asp Leu Lys Asp Gly Val Arg Ser Ser Arg Met Ser Val Asp Pro
            20              25              30
Ala Ile Ala Asp Thr Asn Gly Gln Gly Val Leu His Tyr Ser Met Val
    35              40              45
Leu Glu Gly Gly Asn Asp Ala Leu Lys Leu Ala Ile Asp Asn Ala Leu
    50              55              60
Ser Ile Thr Ser Asp Gly Leu Thr Ile Arg Leu Glu Gly Gly Val Glu
65              70              75              80
Pro Asn Lys Pro Val Arg Tyr Ser Tyr Thr Arg Gln Ala Arg Gly Ser
            85              90              95
Trp Ser Leu Asn Trp Leu Val Pro Ile Gly His Glu Lys Pro Ser Asn
            100             105             110
Ile Lys Val Phe Ile His Glu Leu Asn Ala Gly Asn Gln Leu Ser His
    115             120             125
Met Ser Pro Ile Tyr Thr Ile Glu Met Gly Asp Glu Leu Leu Ala Lys
    130             135             140
Leu Ala Arg Asp Ala Thr Phe Phe Val Arg Ala His Glu Ser Asn Glu
145             150             155             160
Met Gln Pro Thr Leu Ala Ile Ser His Ala Gly Val Ser Val Val Met
            165             170             175
Ala Gln Thr Gln Pro Arg Arg Glu Lys Arg Trp Ser Glu Trp Ala Ser
            180             185             190
Gly Lys Val Leu Cys Leu Leu Asp Pro Leu Asp Gly Val Tyr Asn Tyr
    195             200             205
Leu Ala Gln Gln Arg Cys Asn Leu Asp Asp Thr Trp Glu Gly Lys Ile
    210             215             220
Tyr Arg Val Leu Ala Gly Asn Pro Ala Lys His Asp Leu Asp Ile Lys
225             230             235             240
Pro Thr Val Ile Ser His Arg Leu His Phe Pro Glu Gly Gly Ser Leu
            245             250             255
Ala Ala Leu Thr Ala His Gln Ala Cys His Leu Pro Leu Glu Thr Phe
            260             265             270
Thr Arg His Arg Gln Pro Arg Gly Trp Glu Gln Leu Glu Gln Cys Gly
    275             280             285
Tyr Pro Val Gln Arg Leu Val Ala Leu Tyr Leu Ala Ala Arg Leu Ser
    290             295             300
Trp Asn Gln Val Asp Gln Val Ile Arg Asn Ala Leu Ala Ser Pro Gly
305             310             315             320
Ser Gly Gly Asp Leu Gly Glu Ala Ile Arg Glu Gln Pro Glu Gln Ala
            325             330             335
Arg Leu Ala Leu Thr Leu Ala Ala Ala Glu Ser Glu Arg Phe Val Arg
            340             345             350
Gln Gly Thr Gly Asn Asp Glu Ala Gly Ala Ala Asn Ala Asp Val Val
    355             360             365
Ser Leu Thr Cys Pro Val Ala Ala Gly Glu Cys Ala Gly Pro Ala Asp
370             375             380
Ser Gly Asp Ala Leu Leu Glu Arg Asn Tyr Pro Thr Gly Ala Glu Phe
385             390             395             400
Leu Gly Asp Gly Gly Asp Val Ser Phe Ser Thr Arg Gly Thr Gln Asn
            405             410             415
```

```
        Trp Thr Val Glu Arg Leu Leu Gln Ala His Arg Gln Leu Glu Glu Arg
                    420                     425                 430
        Gly Tyr Val Phe Val Gly Tyr His Gly Thr Phe Leu Glu Ala Ala Gln
                    435                     440                 445
  5     Ser Ile Val Phe Gly Gly Val Arg Ala Arg Ser Gln Asp Leu Asp Ala
                450                     455                 460
        Ile Trp Arg Gly Phe Tyr Ile Ala Gly Asp Pro Ala Leu Ala Tyr Gly
        465             470                     475                 480
        Tyr Ala Gln Asp Gln Glu Pro Asp Ala Arg Gly Arg Ile Arg Asn Gly
 10                 485                     490                 495
        Ala Leu Leu Arg Val Tyr Val Pro Arg Ser Ser Leu Pro Gly Phe Tyr
                    500                     505                 510
        Arg Thr Ser Leu Thr Leu Ala Ala Pro Glu Ala Ala Gly Glu Val Glu
                    515                     520                 525
 15     Arg Leu Ile Gly His Pro Leu Pro Leu Arg Leu Asp Ala Ile Thr Gly
                    530                     535                 540
        Pro Glu Glu Glu Gly Gly Arg Leu Glu Thr Ile Leu Gly Trp Pro Leu
        545                     550                     555                 560
        Ala Glu Arg Thr Val Val Ile Pro Ser Ala Ile Pro Thr Asp Pro Arg
 20                 565                     570                 575
        Asn Val Gly Gly Asp Leu Asp Pro Ser Ser Ile Pro Asp Lys Glu Gln
                    580                     585                 590
        Ala Ile Ser Ala Leu Pro Asp Tyr Ala Ser Gln Pro Gly Lys Pro Pro
                    595                     600                 605
 25     Arg Glu Asp Leu Lys
                    610


        SEQ ID NO:25
        gaacccgacg cagccggccg tatccgcaac                                        30
 30
        ·SEQ ID NO:26
        gttgcggata cggccggctg cgtcgggttc                                        30


        SEQ ID NO:27
 35     gctgtcgtgg aaccaggtcg accagg                                            26


        SEQ ID NO:28
        ctttgttagc agccgaattc atattcgat                                        29


 40     SEQ ID NO:29
        Gly Thr His Trp
          1


 45
```